

What is claimed is:

1. A method of using a graphics processor to reduce visual artifacts, comprising:
storing a gamma correction factor in a lookup table of said graphics processor;
generating rasterized pixels of a graphical image;
determining a coverage value for each fragment of a primitive of said graphical image;
reading said lookup table for said gamma correction factor;
for each partially covered pixel of said primitive, gamma correcting its coverage value to form gamma corrected coverage values;
wherein said gamma correction factor is selected to at least partially compensate for a nonlinear response of a display.
2. The method of claim 1, wherein said primitive is a vector graphics primitive.
3. The method of claim 1, wherein said primitive is selected from the group consisting of a circle, a line, a stippled line, and a polygon.
4. The method of claim 1, wherein said gamma correcting is only for partially covered pixels corresponding to edge pixels.
5. The method of claim 1, further comprising:
performing an antialiasing process using said gamma corrected coverage values in place of corresponding coverage values.
6. The method of claim 5, wherein:
said performing includes blending partially covered pixels with background pixels to represent edges with a subpixel precision, with a weight assigned to partially covered pixels being given by the gamma corrected coverage value and a weight assigned to background pixels being one minus the gamma corrected coverage value.
7. The method of claim 5 wherein said antialiasing process generates an antialiased image, the method further comprising: in said display, gamma correcting each pixel of said antialiased image.

8. The method of claim 1, wherein said lookup table is run time loadable and said storing comprises:
- generating a graphical user interface having a control panel for a user to input a request to gamma correct smoothed primitives;
 - determining a gamma correction factor for said request; and
 - writing said gamma correction factor in said lookup table.
9. The method of claim 8, wherein said writing comprises:
- enabling a class of primitives for gamma correction.
10. The method of claim 8, wherein said determining comprises:
- selecting a gamma correction factor for a display type entered by said user.
11. The method of claim 1, further comprising:
- assigning pixels having a coverage value below a preselected coverage value a gamma corrected coverage value of zero.
12. A method of forming smoothed primitives in a graphics system having a CPU and a graphics processor, comprising:
- receiving a request from a user to gamma correct smoothed primitives;
 - determining a gamma correction factor for said request;
 - writing said gamma correction factor in a lookup table of said graphics processor;
 - in said graphics processor, determining a coverage value per pixel for each fragment of a primitive; and
 - in said graphics processor, gamma correcting each said coverage value to form gamma corrected coverage values, said gamma correction factor being selected to account for a non-linear response of a display; and
 - in said graphics processor, performing an antialiasing process using said gamma corrected coverage values in place of corresponding coverage values.
13. The method of claim 12, wherein said primitive is selected from the group consisting of a circle, a line, a stippled line, and a polygon.

14. The method of claim 12, wherein:

said performing includes blending partially covered pixels with background pixels, with a weight assigned to partially covered pixels being given by the gamma corrected coverage value and a weight assigned to background pixels being one minus the gamma corrected coverage value.

15. The method of claim 12, further comprising:

assigning pixels having a coverage value below a preselected coverage value a gamma corrected coverage value of zero.

16. The method of claim 12, wherein said antialiasing process generates an antialiased image, the method further comprising: in said display, gamma correcting each pixel of said antialiased image.

17. A method of using a graphics processor for gamma correction of smoothed primitives, comprising:

reading a look up table stored in a memory of said graphics processor to determine a gamma correction factor;

determining a coverage value per fragment for each rasterized pixel of a primitive;

gamma correcting said coverage value for each partially covered pixel; and

blending each partially covered pixel with a corresponding pixel stored in a framebuffer, wherein the blending weight for blending each partially covered pixel with its corresponding pixel is calculated using said gamma corrected coverage value in place of said coverage value;

wherein said gamma correction factor is selected to account for a non-linear response of a display.

18. The method of claim 17, wherein said primitive is selected from the group consisting of a circle, a line, a stippled line, and a polygon.

19. The method of claim 17, further comprising:

loading said gamma correction factor into said lookup table prior to execution of a graphics program.

20. The method of claim 17, further comprising:
providing a user a graphical user interface to select said gamma correction factor.
21. The method of claim 17, further comprising:
providing a user an interface to enable and disable gamma correction.
22. The method of claim 17, further comprising:
providing a user an interface to selectively enable and disable gamma correction.
23. The method of claim 17, wherein pixels having a coverage factor below a preselected threshold value are assigned a zero coverage value.
24. The method of claim 17, wherein pixels having a zero coverage value below a preselected threshold value are discarded prior to blending.
25. A graphics system, comprising:
a graphics processor, including:
a geometry processor to form geometric primitives;
a rasterizer to convert geometric primitives into pixel-sized elements;
a coverage completion module to calculate a coverage value per pixel of a primitive; and
a look up table to store a gamma correction factor for partially covered pixels;
said graphics processor reading said gamma correction factor to form for each partially covered pixel a gamma corrected coverage value for use in antialiasing said primitive.
26. The graphics systems of claim 25, wherein said lookup table is run time loadable.
27. The graphics system of claim 26, wherein said gamma correction factor is written into said lookup table in response to a user request.
28. The graphics system of claim 27, further comprising:

a blending processor adapted to blend partially covered pixels with background pixels to achieve sub-pixel resolution of edges of primitives, wherein said blending processor uses said gamma corrected coverage values for coverage values used to anti-alias said primitive.

29. The graphics system of claim 25, wherein said graphics processor is configured to receive said gamma correction in response to a user input entered from a graphical user interface.

30. The graphics system of claim 29, further comprising:

a central processing unit having an associated system memory, said central processing unit and said associated system memory coupled to said graphics processor by a bus.

31. A graphics system, comprising:

a central processing unit having an associated system memory;

a graphics processor communicatively coupled to said central processing unit by a bus, said graphics processor including:

a geometry processor to form geometric primitives;

a rasterizer to convert geometric primitives into pixel-sized elements;

a coverage completion module to calculate a coverage factor per pixel of a primitive; and

a look up table to store a gamma correction factor for partially covered pixels;

said graphics processor reading said gamma correction factor to form for each partially covered pixel a gamma corrected coverage value for use in antialiasing said primitive.

32. The graphics system of claim 31, wherein said graphics system is configured to generate a graphical user interface for a user to enter a request for gamma correction and write said gamma correction in said lookup table of said graphics processor.

33. A computer program product stored in a computer readable medium, comprising:

computer readable code residing in said computer readable medium for generating a graphical user interface for a user to enter a request for gamma correction of smoothed primitives; and

computer readable code residing in said computer readable medium for writing a gamma correction factor in a run time loadable lookup table of a graphics processor for gamma correcting coverage values of partially covered pixels.